# Addendum No. 3 — 2484
# To
# IMPACTED MATERIALS PLACEMENT PLAN ON-SITE DISPOSAL FACILITY

## Alternative Trenching Method for Placement of Category 2 Impacted Material

## 20100-PL-007

## Revision A
## August 1999

## FINAL DRAFT

## United States Department of Energy

**Fernald Environmental Management Project**
**Fernald, Ohio**

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**Addendum No. 3**

**To**

- 2484

**Impacted Material Placement Plan**

**On-Site Disposal Facility**

**Alternative Trenching Method for Placement of Category 2 Impacted Material**

In accordance with Section 8, Article 8.3 of the Impacted Materials Placement (IMP) Plan, Revision 0, dated January 1998 for the On-Site Disposal Facility (OSDF) describes the placement and compaction procedures for Category 2 impacted material. As described in Section 5, Article 5.2 of the IMP Plan, Category 2 impacted materials are materials that can be transported, placed, spread and compacted *en masse*. Examples of Category 2 impacted material include: broken-up concrete foundations, impacted soil mixed with broken-up concrete, general building rubble and debris of irregularly shaped metals or other components of the superstructure or substructure with a maximum length of 10 ft. (3 m) and a maximum thickness of 18 in. (450 mm).

This specialized placement plan provides an alternative trenching method and related requirements for placement of Category 2 impacted material. This alternative trenching method shall be used for non-routine placement of Category 2 impacted material when:

- Types of Category 2 impacted material require lateral confinement for spreading and placement activities (e.g., structural steel, pipes), or

- Types of Category 2 material require special handling (such as large structural members that meet the Category 2 materials size criteria)

## PLACEMENT REQUIREMENTS

Placement of Category 2 impacted material using the alternative trenching method shall be performed in accordance with Fernald Environmental Management Project (FEMP) radiological safety procedures, the IMP Plan, including fugitive dust control and storm water runoff control, and the Contractor's approved Safe Work Plan. The Contractor's

Safe Work Plan shall be revised to include requirements for the Alternative Trenching Method. In addition to the requirements described in the above said documents, Category 2 impacted material shall be placed in a manner protective of the health and safety of OSDF personnel and the public, utilizing the As Low As Reasonably Achievable (ALARA) approach and shall meet the OSDF performance criteria stated in the Design Criteria Package for the OSDF.

A minimum of two (2) working days prior to commencement of Category 2 impacted material placement by the alternative trenching method, the Construction Manager will select and approve a previously placed minimum 3 ft (0.9 m) thick Category 1 grid. The trench for placement of Category 2 material by this method shall meet the following requirements:

- A trench shall not be excavated in previously placed Category 2 through 5 impacted material, protective layer, or select impacted material layer.
- A trench shall not be excavated within 6 ft (1.8m) under the select material for the cap system.
- Minimum thickness of Category 1 material under trench excavation shall be 2 ft (0.6m) or the intervening horizon of Category 1 impacted material, as described in the IMP Plan, whichever is greater.

Category 2 material placement in a trench shall be in accordance with the requirements and general procedures presented herein and as shown on Figure 1.

General procedures include:

- Trench Excavation
- Category 2 Material Placement
- Lift(s) of Category 1 Material

Requirements for each procedure are as follows:

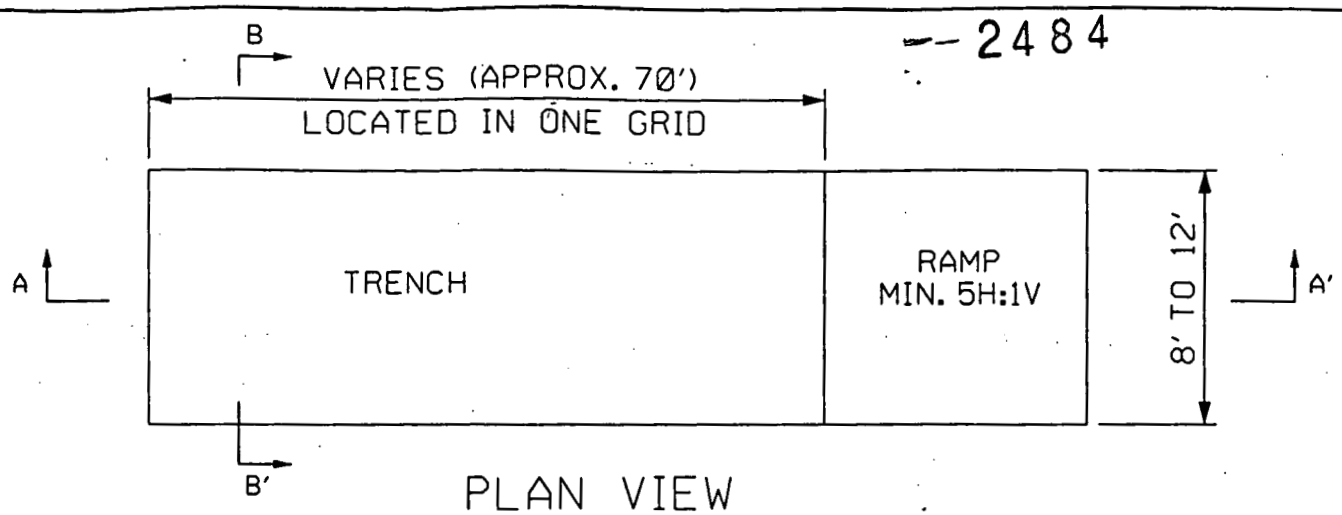
Trench Excavation: After a grid(s) is selected and approved, a trench (or trenches) shall be excavated as shown on Figure 1. Each trench shall be a minimum of 3 ft (0.9 m) deep

and a maximum of 4 ft (1.2 m) deep, and between 8 ft (2.4 m) and 12 ft (3.6 m) wide. A minimum 6 ft (1.8 m) distance shall be maintained between top of the side slopes of the adjacent trenches. One end of the trench shall be graded to a minimum 5H:1V (subject to approval by FDF Safety Engineer) ramp for truck access into the trench. The maximum trench length shall be approximately 70 ft (21 m) and shall be limited by the maximum length that can be excavated in one grid and still provide adequate access to enter and exit the trench. The Category 1 material excavated from the trench shall be stockpiled a minimum of 6 ft (1.8 m) from the top of the side slopes of the trench and shall be used later for lift(s) of Category1 material over the Category 2 impacted material.

Category 2 Material Placement: After the trench is excavated, trucks transporting Category 2 impacted material shall back down the ramp and begin dumping material at the furthest end of the trench. Category 2 material shall be spread by construction equipment, such as a trackhoe or dozer, to achieve a maximum loose lift thickness of 18 in. (450 mm) ± 3 in. (75 mm). Contractor shall spread and mix Category 1 material as much as practicable with Category 2 material during placement in the trench. The objective of this mixing is to fill voids within the Category 2 material, increase the density, and aid in homogenizing the debris. Initial compaction shall be accomplished as the materials are spread and mixed using the trackhoe bucket or tracking with a dozer. Fugitive dust and storm water runoff controls shall be in accordance with the IMP Plan. Water trucks and/or water hoses will be available at the location of placement activities.

Lift(s) of Category 1 Material: The compacted Category 2 impacted material shall be covered with a 12 in. (300 mm) to 15 in. (375 mm) loose lift of Category 1 material. The lift shall be compacted with a minimum of four one-way passes of a self-propelled double drum roller compactor, a smooth drum vibratory roller or other compaction equipment approved by the Construction Manager. Additional 12 in. (300 mm) to 15 in. (375 mm) loose lift(s) of Category 1 material shall be placed, if necessary, to the top of trench elevation. Total compacted thickness of Category 1 material placed above the Category 2 impacted material, shall be a minimum of 15 in. (375 mm) as shown on attached Figure 1. The lift(s) of Category 1 material shall be compacted to at least 90 percent of the standard Proctor maximum dry density. Compaction shall be tested in accordance with the IMP

Plan. Category 1 material shall subsequently be placed in accordance with the IMP Plan to a minimum thickness of 2-ft (0.6m) or the intervening horizon as described in the IMP Plan, whichever is greater, as shown on Figure 1.




PLAN VIEW

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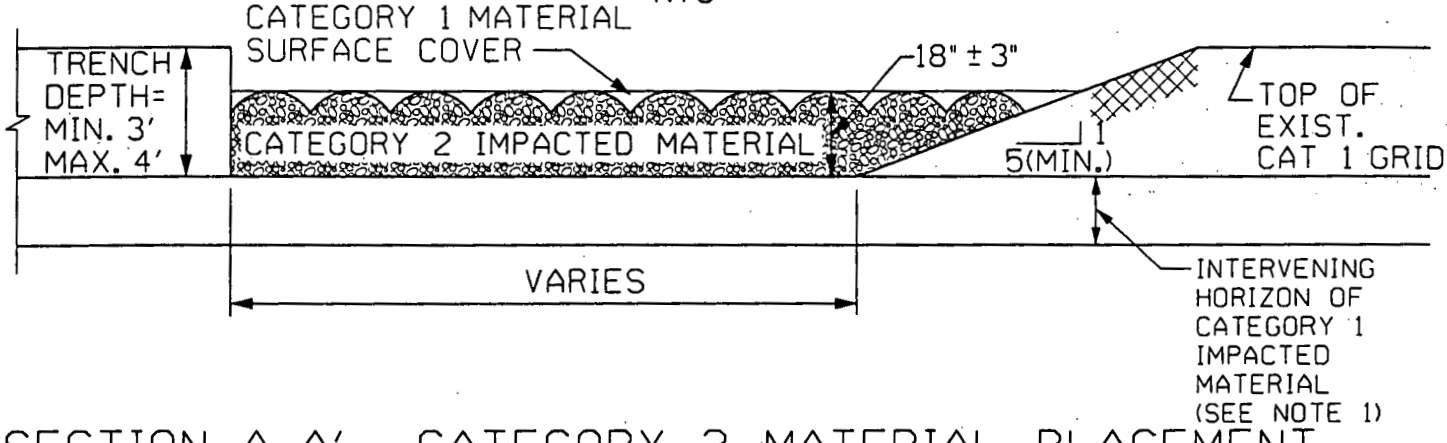


SECTION A-A' - CATEGORY 2 MATERIAL PLACEMENT

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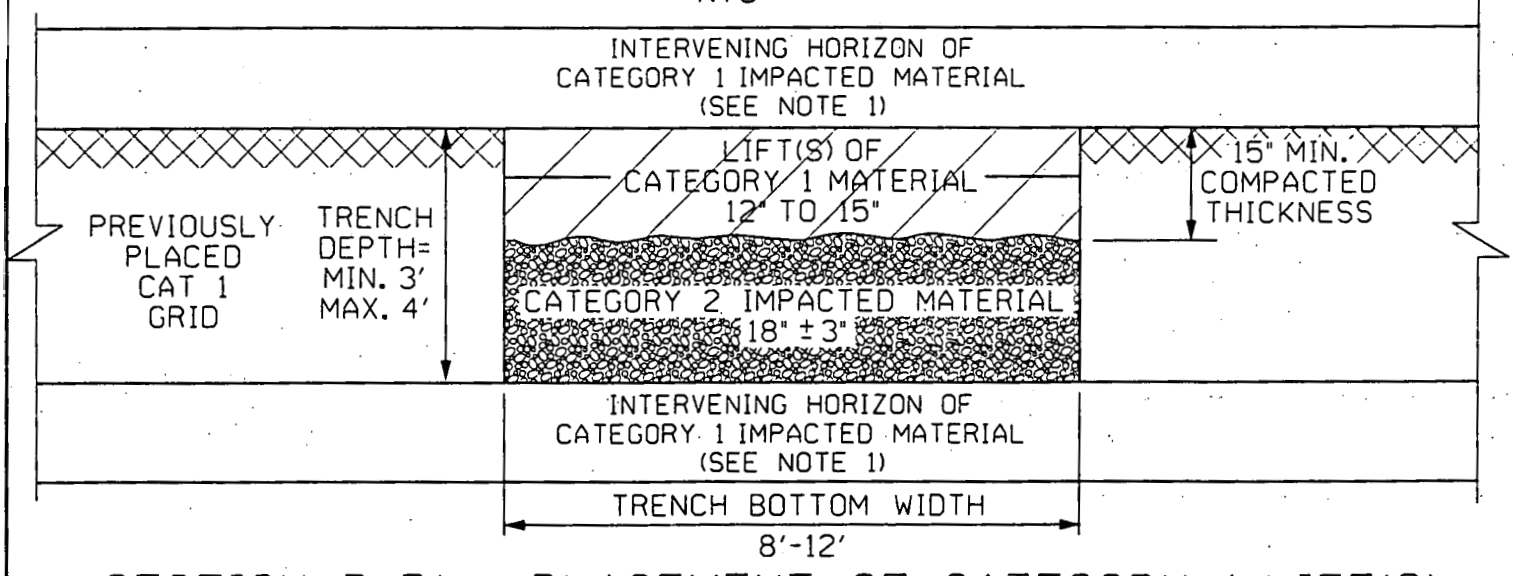


SECTION B-B' - PLACEMENT OF CATEGORY 1 LIFT(S)

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NOTES:

1. COMPACTED THICKNESS OF MINIMUM 2 FEET OR THICKNESS OF INTERVENING HORIZON OF CATEGORY 1 MATERIAL AS DESCRIBED IN IMPACTED MATERIAL PLACEMENT PLAN; WHICHEVER IS GREATER.

FIGURE 1
CATEGORY 2 IMPACTED MATERIAL PLACEMENT
ALTERNATIVE TRENCHING METHOD
SHEET 1 OF 1

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figures.dgn